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ABSTRACT

To assist in the continuing efforts to improve the safety of the motorist on the nation's highways and roads, this student guide provides a standardized approach for first responders to traffic accidents to learn emergency medical care. Training is provided in all aspects of emergency medical care required at the scene of a traffic accident. Approximately half of the course is focused on the practice of crash-related and life-saving skills. Other areas covered are: legal aspects of rendering medical care, illnesses or conditions causing or resulting from a crash, patient examination and diagnosis, gaining access to patients in a vehicle, and problems of moving injured persons. The twenty lessons include technical lessons, field training, and final written and practical examinations. (Author/EA)

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emergency medical services

crash injury management

for traffic law enforcement officers

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U.S. Department of Transportation
National Highway Traffic Safety Administration

July 1973

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emergency medical services
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U.S. Department of Transportation
National Highway Traffic Safety Administration
Washington, D.C. 20590

July 1973

FOREWORD

As part of its continuing efforts to improve the safety of the motorist on the nation's highways and roads, the National Highway Traffic Safety Administration recognized the need to develop a standardized approach for providing training in emergency medical care for first responders to traffic accidents. The contract directed that the course be modeled on the 81-hour "Basic Training Program for Emergency Medical Technician--Ambulance" recently developed by Dunlap and Associates, Inc., for the U.S. Department of Transportation. [1]

The basic working documents produced for the program are the Course Guide, designed to be used by the training administrator as the basic planning document for the course, the Instructor's Lesson Plans, prepared to assist the instructor in conducting each lesson, and the Student Study Guide, designed as a workbook to assist the student in reviewing materials presented in class. In addition, a Final Report describes the development of the training course and course documents.

Dr. Aaron Adams of the National Highway Traffic Safety Administration served as Contract Technical Manager. Mr. Frederick J. Lewis of the Rescue and Emergency Medical Services Division and Mr. Martin M. Puncke of the Traffic Regulations and Adjudication Division served as project advisors. The project was directed by Miss Arlene M. Cleven of Dunlap and Associates, Inc., who prepared all course documents. Mr. Joseph T. Fucigna, Executive Vice President of the Corporation, served as responsible corporate officer.

Dunlap and Associates, Inc., is indebted to the following individuals who provided critical technical reviews of draft course materials:

- Dr. Edward A. Rem, Director of Emergency Medical Services, Norwalk Hospital, Norwalk, Connecticut, and the Course Coordinator for the pilot test of the "Basic Training Program for Emergency Medical Technician--Ambulance."

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[1] U.S. Department of Transportation, National Highway Traffic Safety Administration. Basic Training Program for Emergency Medical Technician--Ambulance. Washington, D.C.: U.S. Government Printing Office, No. TD-2.208:EM 3 (Concepts and Recommendations, October 1969), No. TD-2.208: EM 3/2 (Course Guide and Course Coordinator Orientation Program, October 1969), and No. TD-2.208:EM 3/3 (Instructor's Lesson Plans, February 1970).

- Dr. Charles A. Rockwood, Jr., Professor and Chairman of Orthopaedics, University of Texas Medical School at San Antonio, and Chairman of the Committee on Non-Physician Education, American Academy of Orthopaedic Surgeons.

- Dr. George W. Hyatt, Professor of Surgery (Orthopaedics) and Chief of Orthopaedics, Georgetown University Medical Center, and Chairman of the Committee on Injuries, American Academy of Orthopaedic Surgeons.

- Mr. Laurence M. Ford, Director of Fire Training Programs, Hartford State Technical College, Hartford, Connecticut.

We are particularly grateful to the Department of Police Service of New Haven, Connecticut, for providing the equipment, facilities, instructors and students for the pilot test of the course. Dr. Martin L. Piccirillo, Director of Training and Education, served as the training administrator. Able instruction and critical review of course materials were provided by the two course instructors: Sergeant Michael N. Tullo and Patrolman Joseph R. Polio. The cooperation and critical comments received from the eight students in the pilot program are gratefully acknowledged. These students were: Patrolmen Robert L. Coffey, James T. Conners, Thomas J. Farrell, Theodis Fenn, Sr., Thomas H. O'Donnell, Dean B. Runlett, Theodore R. Wilkins, and Edward R. Woods.

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USING THE STUDENT STUDY GUIDE

Purpose: The Student Study Guide has been prepared to help you review information presented in class.

Contents: Training objectives are given for all lessons, and review exercises are provided where appropriate. No review exercises are given for general background lessons or review and examination sessions.

Review Exercises: Study Guide exercises look like test items--that is, they contain true-false and short-answer items. However, THE STUDENT STUDY GUIDE IS NOT A TEST. It has been designed to help in reviewing and reinforcing information presented in class and will serve as a point of departure for "Review and Discussion" sessions.

Procedures:

1. For each true-false item, circle T (for true) or F (for false).
2. Correct all false items to make them true.
3. Complete all short-answer questions. Be brief and include only major points.
4. If you don't know the answer to a question, refer to your class notes or to one of the references suggested by your instructor.
5. Sometimes you will note that there is no precisely correct answer to a Study Guide item. Such items have been included to stimulate thought and can be answered in different ways depending on the approach taken. For such items, decide on your own approach and answer the question accordingly.

Suggestion: KEEP YOUR STUDY GUIDE UP-TO-DATE. AN UP-TO-DATE STUDY GUIDE CAN HELP YOU IN STUDYING FOR EXAMINATIONS.

LESSON 1

INTRODUCTION TO CRASH INJURY MANAGEMENT TRAINING

Objectives:

Provide the student with sufficient information for him to:

- Understand course coverage, schedule and requirements.
- Define the rescuer's emergency care role and responsibilities and legal rights and responsibilities relative to emergency care.
- Introduce the student to the emergency care equipment which he will be trained to use.

Review Exercises

No review exercises have been developed for this lesson. The lesson is intended to provide an overview of the course and to introduce the student to his roles and responsibilities as well as legal rights and responsibilities at the accident scene.

LESSON 2

OVERVIEW OF THE HUMAN BODY AND DIAGNOSTIC SIGNS

Objectives:

Provide the student with a brief overview of the design of the body and diagnostic signs with which he will be dealing in his emergency care work.

Review Exercises

No review exercises have been developed for this lesson. The lesson is designed to introduce the student to the design of the body and the diagnostic signs with which he will be dealing. It also introduces him to some of the terminology used in emergency medical care. Much of the information is covered in more detail in subsequent lessons.

LESSON 3

AIRWAY CARE AND PULMONARY RESUSCITATION

Objectives:

Provide the student with sufficient information for him to:

- Describe the importance of oxygen to the body, particularly the brain.
- Describe components of the respiratory system and explain how the system works.
- Describe the signs of adequate and inadequate breathing.
- *. Describe the technique for inserting and precautions to follow when using S-shaped airways.
- Describe airway care and resuscitation procedures for neck breathers (laryngectomees).

Provide the student with sufficient practice for him to:

- Demonstrate on a manikin the four techniques for maintaining an open airway.
- Demonstrate on a manikin procedures for dislodging foreign objects from the airway.
- Demonstrate on an adult manikin the mouth-to-mouth and mouth-to-nose techniques of pulmonary resuscitation and on an infant manikin the mouth/nose technique.
- *. Demonstrate ventilation of a manikin using the bag-mask resuscitator.
- *. Demonstrate setting up, using and shutting down oxygen equipment.

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*An asterisk(*) is used throughout this document to indicate that the information presented may be inapplicable to some jurisdictions.

Review Exercises

Circle T (for true) or F (for false) for each of the following statements. Correct all false statements.

T F 1. All living cells of the body require oxygen to survive.

T F 2. It is especially important that brain cells receive an adequate supply of oxygen.

T F 3. Air entering the nose passes to the pharynx.

T F 4. The esophagus carries air to the lungs.

T F 5. The epiglottis guards the opening to the esophagus.

T F 6. The larynx contains the vocal cords that permit us to speak.

T F 7. In the lungs, the bronchi divide into smaller and smaller parts until they end in millions of tiny air sacs known as alveoli.

T F 8. Oxygen and carbon dioxide are exchanged between the alveoli and tiny capillaries.

T F 9. The chest cavity decreases in size when the diaphragm and rib muscles contract.

T F 10. If the pleura is torn, the lungs cannot expand normally.

T F 11. If we wish, we can breathe faster than our normal rate but cannot do so indefinitely.

T F 12. The normal breathing rate is about 10 breaths per minute.

T F 13. A grayish-blue skin color is one sign of inadequate breathing.

T F 14. A clean handkerchief placed over the patient's mouth will not seriously hamper inflation of the lungs by the mouth-to-mouth technique.

T F 15. For both mouth-to-mouth and mouth-to-nose resuscitation, the patient's mouth should be open on exhalation.

T F 16. Noisy breathing is a sign of cyanosis.

T F 17. Persons who have all or some of their larynx removed through surgery are known as laryngectomees or neck breathers.

T F 18. If the complete larynx has been removed, the person breathes only through an opening in his neck.

T F 19. The neck opening in a laryngectomee is known as a stoma.

T F 20. Unconscious laryngectomees should be positioned on their stomachs to ease breathing.

Complete each of the following items. Your answers should be brief and include only major points.

1. The air we breathe in normally contains _____% oxygen.

2. The air we breathe out normally contains _____ to _____% oxygen.

3. The control center for breathing is the _____.

4. Without oxygen, brain cells will die in _____ to _____ minutes.

5. You have arrived at the scene of an accident and find an unconscious non-breathing person in the wreckage. The driver of another vehicle stopped at the scene tells you that the accident occurred 10 minutes ago. Would you resuscitate the victim? Explain your answer.

6. List three signs of adequate breathing:

7. List four signs of inadequate breathing:

8. What does cyanosis mean?

9. The patient is sitting in the front seat of the car. He has been coughing as if he were trying to expel a foreign object from his throat. Suddenly he becomes unconscious. What would you do?

10. The normal rate of resuscitation for adults is _____ to _____ times per minute.

11. The normal rate of resuscitation for infants is _____ to _____ times per minute.

12. In addition to rate of resuscitation, in what other ways is resuscitation different for adults and infants? Why?

13. How would you resuscitate a patient whose tongue was badly swollen?

14. The chest appears to be moving normally, but no exhaled air can be felt at nose and mouth. What might you suspect and what would you check for?

15. What would you do if the stomach becomes distended during resuscitation?

LESSON 4

CARDIOPULMONARY RESUSCITATION

Objectives:

Provide the student with sufficient information for him to:

- Describe how the heart functions.
- Describe the signs of cardiac arrest.
- Describe the technique of cardiopulmonary resuscitation and variations in technique for infants and small children.
- Identify organs near the heart and dangers to the patient if cardiopulmonary resuscitation is not performed correctly.

Provide the student with sufficient practice for him to:

- Demonstrate on a manikin cardiopulmonary resuscitation by a lone rescuer.
- Demonstrate cardiopulmonary resuscitation on an infant manikin.
- Demonstrate on a manikin cardiopulmonary resuscitation as a member of a team performing both as a ventilator and as a compressor, including changing positions during resuscitation.

Review Exercises

Circle T (for true) or F (for false) for each of the following statements. Correct all false statements.

T F 1. The heart is a pump.

T F 2. The carotid pulse is located in the wrist.

T F 3. Shallow breathing is one sign of cardiac arrest.

T F 4. Constricted pupils are one sign of cardiac arrest.

T F 5. In order for cardiopulmonary resuscitation to be performed correctly, the patient must be on a firm surface such as the ground or a spine board.

T F 6. In performing CPR, the rescuer's hands are located on the upper half of the sternum.

T F 7. In performing CPR, the heel of one hand is placed on top of the other, with fingers raised so that no contact is made with the ribs.

T F 8. In performing CPR, the sternum is compressed approximately 40 to 50 times per minute.

T F 9. The sternum of an adult should be compressed about 1-1/2 inches.

T F 10. Cardiopulmonary resuscitation can be performed by a single rescuer.

T F 11. The existence of a carotid pulse is one sign of effective resuscitation.

T F 12. A lone rescuer can feel a carotid pulse with each compression of the sternum.

T F 13. Improved skin color is one sign of effective resuscitation.

T F 14. For infants, only the palm of one hand should be used for performing CPR.

T F 15. Spontaneous movement of the patient's legs is one sign of effective resuscitation.

T F 16. If CPR is performed incorrectly, it is possible for the patient's ribs to be broken.

T F 17. Broken ribs can result in lacerations of the liver, spleen, lungs or heart.

T F 18. In performing CPR, the heel of one hand should be located directly over the xiphoid process.

T F 19. The liver and spleen have a large blood supply and bleed profusely if torn.

T F 20. When compressing the sternum, the rescuer should keep his elbows straight.

Complete each of the following items. Your answers should be brief and include only major points.

1. Describe in simple terms how the heart and lungs work together to provide the body with oxygen.

2. List four possible dangers to body organs if CPR is not performed correctly.

3. Why should the elbows be kept straight when compressing the sternum?

4. Indicate the number of ventilations and compressions for one-man CPR:

   First ventilation:_____
   First compression:_____
   Subsequent ventilations:_____
   Subsequent compressions:_____

5. Indicate the number of ventilations and compressions for two-man CPR:

   First ventilation:_____
   First compression:_____
   Subsequent ventilations:_____
   Subsequent compressions:_____

6. Explain how CPR for children up to 8 or 10 years old is different from CPR for adults.

7. Explain how CPR for infants is different from CPR for adults.

8. You are following a car that veers off the road and hits a pole. You find the driver is not breathing and has no carotid pulse. What is the first thing you will do?

9. The patient has all the signs of cardiac arrest and, from your observations, appears also to have broken ribs. Would you perform cardiopulmonary resuscitation? Explain your answer.

10. Draw a rough sketch of the chest cavity, including the clavicle, sternum, xiphoid and ribs. Mark an "X" on the sternum to indicate the correct position of the hands for performing CPR.

LESSON 5

SHOCK, BLEEDING, AND INJURIES TO SOFT TISSUES

Objectives:

Provide the student with sufficient information for him to:

- Describe the design, functions and components of the circulatory system.
- Describe the meaning of shock, signs of shock, and techniques for preventing shock.
- Describe the meaning of and emergency care for anaphylactic shock.
- Describe the signs, symptoms and emergency care for internal bleeding.
- Describe the differences between arterial, venous and capillary bleeding.
- Describe means of controlling bleeding.
- Describe management of open and closed soft tissue wounds.

Provide the student with sufficient practice for him to demonstrate proficiency in dressing and bandaging various body parts.

Review Exercises

Circle T (for true) or F (for false) for each of the following statements. Correct all false statements.

T F 1. Veins collect oxygenated blood from the capillaries and carry it back to the heart.

T F 2. Each time the heart pumps, a pulse can be felt throughout the arterial system.

T F 3. The normal adult has six quarts of blood.

T F 4. Blood carries oxygen to body tissues and removes waste products.

T F 5. Shock is defined as a general collapse of body muscle tone.

T F 6. A weak and rapid pulse is one of the signs of shock.

T F 7. A cold dry skin is one of the signs of shock.

T F 8. Anaphylactic shock is an acute allergic reaction.

T F 9. Anaphylactic shock can be caused by an allergic reaction to foods.

T F 10. Anaphylactic shock is not a serious emergency.

T F 11. Internal bleeding can result in severe blood loss and the patient may die of shock.

T F 12. The signs of internal bleeding are similar to those of shock.

T F 13. A cold, clammy skin is one sign of internal bleeding.

T F 14. If the patient coughs up bright red frothy blood, it is a sign that his liver has been lacerated.

T F 15. Bleeding oozes from an artery and is dark red in color.

T F 16. Blood spurts from a vein.

T F 17. Direct pressure over the wound will stop most bleeding.

T F 18. Elevation may help control bleeding in an extremity.

T F 19. Protruding organs should be reinserted in the body in their normal positions before dressing and bandaging the wound.

T F 20. An impaled object should be removed before dressing and bandaging the wound.

T F 21. The face and scalp are richly supplied with arteries and veins and wounds of these areas bleed heavily.

T F 22. Direct pressure should be applied to a lacerated eyeball to control bleeding.

T F 23. If it is necessary to bandage one eye, it is advisable to cover both eyes.

T F 24. For an unconscious patient, the rescuer should assure that the eyes are closed prior to bandaging them.

T F 25. Rupture of an intestine can result in its contents spilling into the abdominal cavity.

T F 26. Rupture of the liver can result in severe bleeding.

T F 27. Brain injuries should be suspected when any injuries are noted about the head.

T F 28. Neck injuries (cervical spine) should be suspected when any injuries are noted about the head.

T F 29. Emergency care rules for the genitalia are the same as those for other soft-tissue injuries.

T F 30. A bandage for exposed intestines should be kept dry if possible.

Complete each of the following items. Your answers should be brief and include only major points.

1. List three functions of blood.

2. Define shock in your own words.

3. List as many signs of shock as you can.

4. Explain why you normally elevate the lower extremities to prevent shock.

5. For what conditions would you not elevate the lower extremities?

6. If you saw a patient with a severely swollen face and obvious breathing difficulties, what might you suspect?

7. Explain why a tourniquet should be used only as a last resort to control bleeding.

8. Why is the color of blood in an artery and vein different?

9. What pressure points may be used to control bleeding in an arm?

10. In your own words, explain what the following statement means: "Preventing shock means caring for the whole patient."

11. List the general emergency care procedures for all open wounds.

12. Why should avulsed parts be preserved?

13. Describe one method for controlling nosebleeds.

14. How would you control arterial bleeding in the neck?

15. How would you control venous bleeding in the neck?

16. What is the special danger if a large vein in the neck is torn?

17. If only one eye is injured, why should you cover both eyes?

18. For an unconscious patient, what special things would you check for if there are wounds of the face?

19. Describe how you would care for a patient with protruding intestines.

20. The patient has a large lump on his left arm. Describe how you would care for this patient.

LESSON 6

FRACTURES AND DISLOCATIONS OF THE EXTREMITIES

Objectives:

Provide the student with sufficient information for him to:

- Describe the design of the extremities in layman's terms.
- Define fractures and dislocations and their common signs.
- Describe procedures for examining a patient for fractures of the extremities.
- Describe in his own words the reason for splinting fractures.
- Describe procedures for immobilizing all fractures and dislocations of the extremities.

Provide the student with sufficient practice for him to:

- Demonstrate proficiency in immobilizing fractures and dislocations of the extremities.

Review Exercises

Circle T (for true) or F (for false) for each of the following statements. Correct all false statements.

T F 1. The skeleton gives form to the body.

T F 2. Much of the liver and spleen are protected by the lower ribs.

T F 3. A fracture means a break in a bone.

T F 4. A dislocation is the displacement of the bone ends that form a joint.

T F 5. A sprain is a partial break in a bone.

T F 6. A dislocation results in an open wound with a bone or bone fragments protruding.

T F 7. A dislocation results in an angle in an arm or leg where there is no joint.

T F 8. The primary objective for splinting is to prevent motion of bone fragments or dislocated joints.

T F 9. A patient should be splinted before he is moved unless there is a great danger to him if he is not moved immediately.

T F 10. In splinting a fracture, the joints above and below the fracture should be immobilized.

T F 11. A dislocated elbow should be straightened before splinting.

T F 12. Fractures of the shaft of the femur are very painful.

Complete each of the following items. Your answers should be brief and include only major points.

1. The shoulder blade is known as the _____ and the collarbone is known as the _____.

2. The arm (shoulder to elbow) has one bone known as the _____.

3. The forearm (elbow to wrist) has two bones: the _____ on the thumb side and the _____ on the little finger side.

4. The upper leg (thigh) has one bone known as the _____.

5. The lower leg has two bones: the _____ in front and the _____ in back.

6. What is the difference between an open and a closed fracture?

7. List the common signs of a fracture.

8. List the common signs of a dislocation.

9. Describe how you would examine a patient for a fracture.

10. Why should you pad splints?

LESSON 7

INJURIES TO THE SKULL, SPINE, CHEST AND PELVIS

Objectives:

Provide the student with sufficient information for him to:

- Describe the design of the skull, spine, chest cavity and pelvis in layman's terms.
- Describe what cerebrospinal fluid is and why no attempt should be made to stop bleeding from the nose or ears when a skull fracture is suspected.
- Describe the signs of a skull fracture and of brain injuries.
- Describe management of patients with skull fractures and with brain injuries.
- Describe the main danger associated with fractures of the facial bones.
- Describe the main danger associated with fractures of the spine and complications that can result from spine injuries.
- Describe how to examine a patient for spine injuries.
- Describe the main dangers and complications associated with chest injuries.
- Describe the signs and management of patients with pelvic fractures.

Provide the student with sufficient practice for him to:

- Demonstrate proficiency in bandaging an open skull wound.
- Demonstrate proficiency in immobilizing a rib fracture.
- Demonstrate proficiency in immobilizing the head and spine of seated patients.

Review Exercises

Circle T (for true) or F (for false) for each of the following statements. Correct all false statements.

T F 1. The cranium protects the brain.

T F 2. A blow to the skull can result in damage to the brain even though there is no break.

T F 3. In the spinal cord are long tracts of nerves that connect the brain with all body organs and parts.

T F 4. The pelvic girdle encloses the liver and spleen.

T F 5. A crack in the skull is known as a depressed skull fracture.

T F 6. Penetrating objects in the skull should be removed to minimize pressure on the brain.

T F 7. Cerebrospinal fluid is a clear liquid.

T F 8. In a patient with a skull fracture, cerebrospinal fluid and blood may drain from the ears and nose.

T F 9. Black eyes is one sign of a skull fracture.

T F 10. If pupils are unequal in size, there may be brain damage.

T F 11. If a patient is unable to move his legs, he should be suspected of having a spine fracture.

T F 12. If a patient is unable to move both his arms and legs, he should be suspected of having a spine fracture.

T F 13. Angulation is common in spine fractures.

T F 14. In open chest wounds, outside air can enter the chest cavity and interfere with normal breathing.

T F 15. A lung lacerated by a penetrating object will collapse.

T F 16. The bandage for a rib fracture should be tightened while the patient is inhaling.

T F 17. Pain in the groin is a sign of a fractured pelvis.

Complete each of the following items. Your answers should be brief and include only major points.

1. What is the purpose of cerebrospinal fluid?

2. If you suspect a skull fracture in a patient, would you stop a nosebleed in that patient? Explain your answer.

3. List three signs that would make you suspect a skull fracture in a patient.

4. List four signs that would make you suspect brain damage.

5. What is the main danger of face fractures and what would you check for?

6. How would you examine a conscious patient for indications of spine injury?

7. How would you examine an unconscious patient for indications of spine injury?

8. Explain procedures for immobilizing a suspected rib fracture.

9. What is a flail chest?

10. What is a "sucking" chest wound?

LESSON 8

HEART ATTACK, STROKE, DIABETES AND EPILEPSY

Objectives:

Provide the student with sufficient information for him to describe the causes, signs and emergency care for the following medical emergencies:

- Heart attack
- Angina
- Heart failure
- Stroke
- Diabetic coma
- Insulin shock
- Epilepsy

Review Exercises

Circle T (for true) or F (for false) for each of the following statements. Correct all false statements.

T F 1. When an artery in the heart becomes blocked, that part of the heart muscle which it serves dies.

T F 2. If a small part of the heart muscle dies, the heart ceases to pump.

T F 3. Crushing pressure in the chest is one sign of a heart attack.

T F 4. The heart attack patient is usually frightened.

T F 5. The heart attack patient will be able to breathe more easily if he is lying flat.

T F 6. Angina is a narrowing of an artery in the heart.

T F 7. Angina patients are usually aware of their condition and know how to care for themselves.

T F 8. In the condition known as heart failure, blood and other fluids collect in the lungs.

T F 9. Patients with heart failure usually have been given a prescription for their condition by their physician.

T F 10. A stroke is caused by a blood clot or tearing of an artery in the heart.

T F 11. Numbness or paralysis of the extremities is one sign of a stroke.

T F 12. A stroke patient may not be able to speak due to paralysis of the facial muscles, tongue and throat.

T F 13. Diabetes is a condition in which the body is unable to use sugar normally.

T F 14. The brain needs a constant supply of sugar and oxygen.

T F 15. Insulin permits sugar to pass from the body cells into the blood stream.

T F 16. If there is too much insulin in the body, there will be too much sugar in the blood stream and not enough in the body cells.

T F 17. If there is too much sugar in the blood stream and not enough in body cells, the patient may go into a diabetic coma.

T F 18. The onset of diabetic coma is rapid, within minutes.

T F 19. In insulin shock, the sugar leaves the blood rapidly and there is insufficient sugar for the brain cells.

T F 20. It is often difficult to distinguish between the signs of insulin shock and diabetic coma.

T F 21. Sugar may save the life of a patient in diabetic coma.

T F 22. A sudden abnormal stimulation of a large number of brain cells produces an epileptic attack.

T F 23. The epileptic should be physically restrained only if he is very wild.

T F 24. An epileptic will usually be unconscious during convulsions and will remain so for 5 to 10 minutes after the seizure stops.

T F 25. After an attack, the epileptic should be encouraged to rest since any activity could precipitate another attack.

Complete each of the following items. Your answers should be brief and include only major points.

1. In what position do you place a heart attack patient? Why?

2. Describe what happens in the heart and lungs during heart failure.

3. What is a stroke?

4. List two things that could make a diabetic go into diabetic coma.

5. List three things that could make a diabetic go into insulin shock.

6. Will all stroke patients show the same signs? Explain your answer.

7. Which is more urgent in terms of emergency care: diabetic coma or insulin shock? Explain your answer.

8. How would you care for a patient having an epileptic seizure?

LESSON 9

POISONS AND DRUGS

Objectives:

Provide the student with sufficient information for him to:

- Describe the signs, emergency care and cautions associated with ingested poisons.
- Describe the emergency care for inhaled poisons.
- Describe the seriousness, care and cautions associated with bites and stings.
- Describe the effects of alcohol and drugs, emergency care and cautions in dealing with alcohol and drug patients.

Review Exercises

Circle T (for true) or F (for false) for each of the following statements. Correct all false statements.

T F 1. If the patient has swallowed gasoline, the rescuer should try to make him vomit.

T F 2. The best cure for carbon monoxide poisoning is fresh air.

T F 3. The major danger from insect bites and stings arises when a person has a hypersensitive reaction.

T F 4. Frothing at the mouth is one sign of anaphylactic shock.

T F 5. Alcohol is a stimulant.

T F 6. If an unconscious patient smells of alcohol, it can be assumed that he is drunk.

T F 7. In very large quantities, alcohol can cause death by paralyzing the respiratory center in the brain.

T F 8. If a person takes tranquilizers with alcoholic beverages, they will help to keep him awake.

T F 9. Drugs are typically classified as uppers and downers.

T F 10. LSD can cause hallucinations.

T F 11. One sign of an overdose of heroin is dilated pupils.

T F 12. The effects of strong doses of downers are similar to the effects of strong doses of alcohol.

Complete each of the following items. Your answers should be brief and include only major points.

1. List the name of the local Poison Control Center.

2. List types of patients in whom vomiting following an ingested poison should not be induced. Give the reason for each case.

3. Describe the signs of anaphylactic shock.

4. List some of the symptoms of alcohol intoxication.

5. What are the major dangers associated with an overdose of "uppers" and how would you care for the patient?

6. What are the major dangers associated with an overdose of "downers" and how would you care for the patient?

LESSON 10

BURNS AND EXPOSURE TO HEAT AND COLD

Objectives:

Provide the student with sufficient information for him to:

- Recognize the difference between first, second and third degree burns.
- Use the rule of nines in estimating the criticality of a burn.
- Describe emergency care for heat and chemical burns.
- Describe the cause, signs and care for:
  - Heat cramps
  - Heat exhaustion
  - Heat stroke
  - General cooling of the body
  - Frostnip
  - Superficial frostbite
  - Deep frostbite (freezing)

Review Exercises

Circle T (for true) or F (for false) for each of the following statements. Correct all false statements.

T F 1. A first-degree burn is characterized by blisters.

T F 2. In a third-degree burn, there is a loss of sensation in the area due to destruction of nerve endings.

T F 3. In an adult, a third degree burn of one leg is considered critical.

T F 4. In a child, a third degree burn of one leg is considered critical.

T F 5. Burns should be covered with grease to relieve pain.

T F 6. The signs of heat cramps are similar to those of shock.

T F 7. In heat exhaustion, the skin is hot and dry.

T F 8. Heat exhaustion results in a very high body temperature.

T F 9. Shivering is an attempt by the body to generate heat.

T F 10. Exposure to cold can result in death.

T F 11. In cold weather, water in the body cells can freeze.

T F 12. Frozen body tissues should be rubbed to stimulate warmth.

Complete each of the following items. Your answers should be brief and include only major points.

1. Draw a rough sketch of the bodies of adults and infants and enter appropriate numbers to illustrate the rule of nines for estimating burns.

2. List four factors that you could use in estimating the criticality of a burn.

3. What areas of the body are considered to be critical in terms of burns?

4. Describe how you would care for a chemical burn of the eye.

5. List the signs of heat exhaustion.

6. How would you care for a patient suffering from heat exhaustion?

7. What causes a heat stroke?

8. How would you care for a person suffering from heat stroke?

9. Would you rub a frostbitten finger? Explain your answer.

10. How would you care for a person who has suffered extreme exposure to the cold?

LESSON 11

EMERGENCY CHILDBIRTH

Objectives:

Provide the student with sufficient information for him to be familiar with procedures to follow in caring for the mother and baby in the event of an emergency childbirth.

Review Exercises

Circle T (for true) or F (for false) for each of the following statements. Correct all false statements.

T F 1. The head of the baby will usually deliver first.

T F 2. When the head delivers, the rescuer should pull on it gently to assist in the delivery.

T F 3. The baby's body is slippery and must be carefully supported.

T F 4. When the baby is delivered, he should be placed on the mother's abdomen with his head down and to one side.

T F 5. If the baby does not breathe, he should be slapped firmly on the back.

T F 6. Blood and mucus should be wiped from the baby's mouth and nose with a sterile gauze pad.

T F 7. Both mother and baby should be kept warm.

T F 8. The afterbirth should be preserved.

Complete each of the following items. Your answers should be brief and include only major points.

1. Describe how to perform pulmonary resuscitation on an infant.

2. What is meant by a "breech" birth?

3. In a breech birth, what would you do if the baby's head did not deliver within 3 minutes?

4. Why is a prolapsed cord a serious emergency?

5. What would you do if there were a prolapsed cord?

LESSON 12

GAINING ACCESS TO THE PATIENT

Objectives:

Provide the student with sufficient information for him to understand techniques of gaining access to a patient using simple tools.

Review Exercises

No review exercises have been developed for this lesson. There are no precise rules for gaining access to trapped victims using simple tools. Procedures will vary with the given situation, the tools available, and the design of the vehicle.

LESSON 13

MOVING PATIENTS

Objectives:

Provide the student with sufficient information for him to know when accident victims should and should not be moved.

Describe emergency moves.

Provide the student with practice in lifting and moving patients from ground surfaces.

Review Exercises

No review exercises have been developed for this lesson. The lesson is essentially concerned with the practical aspects of when and when not to move patients and specific moving techniques.

LESSON 14

PATIENT EXAMINATION AND TRIAGE

Objectives:

Provide the student with sufficient information for him to:

- Define and describe the implications of variations in each vital sign.
- Demonstrate procedures to follow in performing a patient examination.
- Identify cases which would be considered of the highest priority for medical care.

Review Exercises

Circle T (for true) or F (for false) for each of the following statements. Correct all false statements.

T F 1. The normal pulse rate for adults is 60 to 80 beats per minute.

T F 2. The normal pulse rate for children is 80 to 100 beats per minute.

T F 3. A rapid strong pulse is one sign of shock.

T F 4. A slow strong pulse is one sign of stroke.

T F 5. A rapid weak pulse is one sign of fright.

T F 6. The normal respiratory rate is about 17 breaths per minute.

T F 7. Respirations are shallow in shock.

T F 8. Bright frothy blood being coughed up is a sign of a bleeding intestine.

T F 9. A patient with severe internal bleeding will have a cool moist skin.

T F 10. A cool dry skin is a sign of exposure to cold.

T F 11. A hot dry skin is a sign of high fever.

T F 12. A patient suffering from heat stroke will have a pale white skin.

T F 13. Cyanosis is a grayish-blue color of the skin.

T F 14. The blue color results from poor oxygenation of the circulating blood.

T F 15. A patient with high blood pressure typically has a blue skin color.

T F 16. Dilated pupils are a sign of head injury.

T F 17. Constricted pupils are a sign of shock.

T F 18. A person can appear confused from most any illness or injury including plain fright.

T F 19. Paralysis of one side of the body is a sign of spinal cord damage in the neck.

T F 20. A person in shock may have no indications of pain even though there are obvious injuries.

Complete each of the following items. Your answers should be brief and include only major points.

1. What is the difference between a sign and a symptom?

2. List the steps you would take to check a patient for head injury or brain damage.

3. If you hear a sucking sound when the patient breathes, what would you suspect and what would you do?

4. Why should you preserve avulsed parts?

5. What are the signs of internal bleeding?

6. How would you check a patient for spinal cord damage?

7. What are the signs of cardiac arrest?

8. How would you check a patient for skull injury/brain damage?

9. What does triage mean?

10. Is a patient with a fractured femur high priority? Explain your answer.

11. Is a patient with third-degree burns about the nose and mouth high priority? Explain your answer.

12. Is the patient with a fractured humerus high priority? Explain your answer.

13. List patient conditions that are considered to be of the highest priority.

LESSON 15

CARDIOPULMONARY RESUSCITATION PRACTICE

Objectives:

Provide the student with additional practice in the technique of cardiopulmonary resuscitation.

Review Exercises

No review exercises have been developed for this lesson. The lesson simply provides additional practice in CPR.

LESSON 16

THE ACCIDENT SCENE: A SITUATIONAL REVIEW

Objectives:

Provide the student with a review and integration of course content.

Review Exercises

No review exercises have been developed for this lesson. The lesson itself is a situational review of certain course contents.

LESSON 17

FIELD TRAINING I

Objectives:

Provide the student with practice in dressing and bandaging wounds and immobilizing fractures in a field setting.

Review Exercises

No review exercises have been developed for this lesson. The lesson itself is a review of practical skills learned in the classroom.

LESSON 18

FIELD TRAINING II

Objectives:

Provide the student with practice in dressing and bandaging wounds and immobilizing fractures in a field setting.

Review Exercises

No review exercises have been developed for this lesson. The lesson itself is a review of practical skills learned in the classroom.

LESSON 19

FINAL WRITTEN EXAMINATION

Objectives:

Test achievement of course objectives.

Review Exercises

Since this is an examination session, there are no review exercises.

LESSON 20

FINAL PRACTICAL EXAMINATION

Objectives:

Evaluate student demonstration of practical skills.

Review Exercises

Since this is an examination session, there are no review exercises.